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COPY of supplemental amendment submitted 9/21/04. The contents of this supplemental Amendment is incorporated in Examiner's Amendment putting the application in condition for allowance.

BURNS DOANE

BURNS DOANE SWECKER & MATHIS LLP
INTELLECTUAL PROPERTY LAW

Burns, Doane, Swecker & Mathis, L.L.P.
Suite 500
1737 King Street
Alexandria, Virginia 22314-2727
Telephone: +1.703.836.6620
Group 3 Fax: +1.703.836.2021
Group 4 Fax: +1.703.836.0028
www.burnsdoane.com

Facsimile Cover

Date: September 28, 2004

TO:	**Examiner Ortiz Rodriguez**		
Fax Number:	**703 746-9439**	Company:	USPTO
Telephone:		Your Reference:	
FROM:	**George F. Lesmes**		
Telephone:	703.838.6683	Our Reference:	000348-280
Sent By:	Peggy	Number of Pages Including Cover:	10

Re: U.S. Patent Application No 09/921,786

Message

ATTACHED IS A COPY OF A SUPPLEMENTAL AMENDMENT AS FILED BY FACSIMILE TRANSMISSION ON SEPTEMBER 21, 2004.

Patent
Attorney's Docket No. 000348-280

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	**VIA FACSIMILE**
Bernard Drevillon et al.	**(703) 872-9306**
Application No.: 09/921,786	Group Art Unit: 2125
Filed: August 6, 2001	Examiner: CARLOS R ORTIZ RODRIGUEZ
For: METHOD FOR REAL-TIME CONTROL OF THE FABRICATION OF A THIN-FILM STRUCTURE BY ELLIPSOMETRIC MEASUREMENTS	Confirmation No.: 7374

SUPPLEMENTAL AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to a telephone interview conducted with Examiner Rodriguez on September 16, 2004, please amend the above-identified patent application as follows:

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Canceled)

2. (Previously Presented) Control method according to Claim 34, wherein the said variables are a combination of the parameters Ψ and Δ.

3. (Previously Presented) Control method according to Claim 34, wherein the said variables are a combination of trigonometric functions of the parameters Ψ and Δ.

4. (Previously Presented) Control method according to Claim 34, wherein the ellipsometric measurement is one with phase modulation.

Claim 5 (Canceled)

6. (Previously Presented) Control method according to Claim 34, wherein the ellipsometric measurement is carried out using the "rotating polarizer" method.

7. (Previously Presented) Control method according to Clam 6, wherein the measured variables are tan Ψ and cosΔ.

8. (Previously Presented) Control method according to Claim 34, wherein the ellipsometric measurement is a multiwavelength measurement.

9. (Previously Presented) Control method according to Claim 34, wherein the reference values form a theoretically determined path.

10. (Previously Presented) Control method according to Claim 34, wherein the reference values form an experimentally determined path.

11. (Previously Presented) Control method according to Claim 34, wherein the reference values are discrete points corresponding to the instants of fabrication of the thin layers with respect to the time t_0.

12. (Previously Presented) Control method according to Claim 34, wherein the path traveled is adjusted by a polynomial of order between 1 and 5.

13. (Previously Presented) Control method according to Claim 34, wherein the reference values are determined by measurement, using the succession of the following steps:

- measurement of a known layer on a simple substrate;
- measurement of the same known layer on an industrial substrate;

measurement of the thin-film structure to be controlled.

14. (Previously Presented) Control method according to Claim 2, wherein the ellipsometric measurement is one with phase modulation.

15. (Previously Presented) Control method according to Claim 3, wherein the ellipsometric measurement is one with phase modulation.

Claim 16. (Canceled)

Claim 17. (Canceled)

18. (Previously Presented) Control method according to Claim 2, wherein the ellipsometric measurement is carried out using the "rotating polarizer" method.

19. (Previously Presented) Control method according to Claim 3, wherein the ellipsometric measurement is carried out using the "rotating polarizer" method.

20. (Previously Presented) Control method according to Claim 18, wherein the measured variables are tan Ψ and cos Δ.

21. (Previously Presented) Control method according to Claim 19, wherein the measured variables are tan Ψ and cos Δ.

22. (Previously Presented) Control method according to Claim 2, wherein the ellipsometric measurement is a multiwavelength measurement.

23. (Previously Presented) Control method according to Claim 3, wherein the ellipsometric measurement is a multiwavelength measurement.

24. (Previously Presented) Control method according to Claim 2, wherein the reference values form a theoretically determined path.

25. (Previously Presented) Control method according to Claim 3, wherein the reference values form a theoretically determined path.

26. (Previously Presented) Control method according to Claim 2, wherein the reference values form an experimentally determined path.

27. (Previously Presented) Control method according to Claim 3, wherein the reference values form an experimentally determined path.

28. (Previously Presented) Control method according to Claim 2, wherein the reference values are discrete points corresponding to the instants of fabrication of the thin layers with respect to the time t_0.

29. (Previously Presented) Control method according to Claim 3, wherein the reference values are discrete points corresponding to the instants of fabrication of the thin layers with respect to the time t_0.

30. (Previously Presented) Control method according to Claim 2, wherein the path traveled is adjusted by a polynomial of order between 1 and 5.

31. (Previously Presented) Control method according to Claim 3, wherein the path traveled is adjusted by a polynomial of order between 1 and 5.

32. (Previously Presented) Control method according to Claim 2, wherein the reference values are determined by measurement, using the succession of the following steps:

- measurement of a known layer on a simple substrate;
- measurement of the same known layer on an industrial substrate;
- measurement of the thin-film structure to be controlled.

33. (Previously Presented) Control method according to Claim 3, wherein the reference values are determined by measurement, using the succession of the following steps:

- measurement of a known layer on a simple substrate;
- measurement of the same known layer on an industrial substrate;
- measurement of the thin-film structure to be controlled.

34. (Currently Amended) A method for real-time control of the fabrication of a thin-film structure by ellipsometric measurement, said method comprising:

(a) reflecting a polarized beam of light from a surface of said structure;

(b) ~~measuring the variables I_s and I_c of the reflected beam where I_s=(sin2ΨsinΔ) and I_c=(sin2ΨcosΔ) or I_c = cos 2Ψ; and~~ measuring real-time control variables representative of the reflected beam, said variables directly linked to an ellipsometric ratio $\rho = \tan \Psi \exp(i\Delta)$;

(c) providing reference values to form a theoretical or experimental path; and

(d) comparing a path traveled by said reflected beam with the reference values,

wherein the said comparison involves the length of the path traveled by said polarized beam of light at a time t in a plane of the variables with respect to an initial point at time t_o for each layer in the thin-film structure.

35. (New) A method according to Claim 4, wherein the measured control variables are, respectively:

$I_s = (\sin 2\Psi \sin\Delta)$ and

$I_c = (\sin 2\Psi \cos\Delta)$ or $I_c = \cos 2\Psi$.

36. (New) A method according to Claim 14, wherein the measured control variables are, respectively:

$I_s = (\sin 2\Psi \sin\Delta)$ and

$I_c = (\sin 2\Psi \cos\Delta)$ or $I_c = \cos 2\Psi$.

37. (New) A method according to Claim 15, wherein the measured control variables are, respectively:

$I_s = (\sin 2\Psi \sin\Delta)$ and

$I_c = (\sin 2\Psi \cos\Delta)$ or $I_c = \cos 2\Psi$.

REMARKS

Pursuant to a telephone interview conducted with Examiner Ortiz Rodriguez on September 16, 2004, Applicants submit herewith proposed amended claim 34 for the Examiner's consideration.

Claim 34 has been amended in the manner suggested by the Examiner except that step (c) specifies that the reference values are provided to form a path determined theoretically or experimentally as set forth in claims 9 and 10, for example. Also, new claims 35-37 are identical to canceled claims 5, 16 and 17, respectively.

Applicants have reviewed the dependent claims to ensure that there is antecedent basis in claim 34 for the terminology used in the dependent claims.

The Examiner is requested to contact the undersigned at (703) 838-6683 if there are any questions on any of the above.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: September 21, 2004

By: George F. Lesmes
George F. Lesmes
Registration No. 19,995

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

I hereby certify that this correspondence is being sent by Facsimile Transmission to the Assistant Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

Date: September 21, 2004
Name: Peggy White
(Typed or printed name of person signing the certificate)
Sign: Peggy White
(Signature of person signing the certificate)
Date: 9/21/04
(Date of Signature)